

SECTION 01411

ENVIRONMENTAL PROTECTION (EDWARDS AFB)

09/99

PART 1 GENERAL

The Hazardous Material Pharmacy Cell (HMC) at Edwards AFB is responsible for tracking all hazardous materials used at, or brought on to, Edwards AFB. "Hazardous material" is defined in the latest version of Federal Standard No. 313 (Federal Standards are sold to the public and Federal Agencies through: General Services Administration, Specifications Unit (3FBP-W), 7th & D Sts., SW, Washington, DC 20407.). Contractors are required to notify the HMC manager of any hazardous materials you will bring onto Edwards AFB under this contract and develop a reporting process to inform the HMC of your hazardous material usage during the contract. Existing reporting processes are in place at Edwards AFB and are available for implementation by new contractors.

1.1 DEFINITIONS

For the purpose of this specification environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and recreational purposes. The control of environment pollution requires consideration of air, water, and land, and involves noise, solid waste-management and management of radiant energy and radioactive materials, as well as other pollutants.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

U. S. Army, Corps of Engineers Publication:

EM 385-1-1	Safety and Health Requirements Manual (3 September 1996)
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1.3 ENVIRONMENTAL PROTECTION REQUIREMENTS

Contractor shall provide and maintain, during the life of the contract, environmental protection. Plan for and provide environmental protective measures to control pollution that develops during normal construction practice. Plan for and provide environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Plan for and provide restorative measures for those areas disturbed by construction and project related activities. Comply with Federal, State, and local regulations pertaining to the environment, including but not limited to solid and hazardous waste generation, natural and cultural resources, water, air and noise pollution.

1.3.1 Environmental Protection Plan

Within 15 days after receipt of Notice of Award of the contract and at least 7 days prior to the Preconstruction Conference, the Contractor shall submit in writing an Environmental Protection Plan and meet with representatives of the Contracting Officer to develop mutual understanding relative to compliance with this provision and administration of the environmental protection program. Approval of the Contractor's plan will not relieve the Contractor of his responsibility for adequate and continuing control of pollutants and other environmental protection measures. The Government reserves the right to make changes in his Environmental Protection Plan and operations as necessary to maintain satisfactory environmental protection performance. The Environmental Protection Plan shall be based upon the terms and conditions published in the environmental document prepared for the project, and shall include but not be limited to the following:

1.3.1.1 Laws, Regulations, and Permits

The Contractor shall prepare a list of Federal, State, and local laws, regulations and permits concerning environmental protection, pollution control and abatement that are applicable to the Contractor's proposed operations and the requirements imposed by those laws, regulations and permits.

1.3.1.2 Protection of Features

The Contractor shall determine methods for the protection of features to be preserved within authorized work areas. The Contractor shall prepare a listing of methods to protect resources needing protection, i.e., trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archaeological and cultural resources.

1.3.1.3 Procedures

The Contractor shall implement procedures to provide the required environmental protection and to comply with the applicable laws and regulations. The Contractor shall set out the procedures to be followed to correct pollution of the environment due to accident, natural causes or failure to follow the procedures set out in accordance with the Environmental Protection Plan.

1.3.1.4 Permit or License

The Contractor shall obtain all needed permits or licenses. The Contractor shall coordinate all environmental permits with the base Environmental Management Office.

1.3.1.5 Drawings

The Contractor shall include drawings showing locations of any proposed temporary excavations or embankments, haul roads, drainage, stream crossings, material storage areas, structures, parking areas, equipment storage areas, sanitary facilities, stockpiles of earth materials, and disposal areas for excess earth material and unsatisfactory earth materials, and any other project related temporary disturbance. The location of all such areas will be coordinated in advance with 95 CEG/CECV (Base Planning) and AFFTC/EM (Environmental Management Office). In no case

shall any location be proposed for use that is not analyzed in the environmental document.

1.3.1.6 Environmental Monitoring Plans

The Contractor shall include environmental monitoring plans for the job site which incorporate land, water, air noise, and any other required or necessary monitoring

1.3.1.7 Traffic Control Plan

The Contractor shall include a traffic control plan for the job site, which shall include any mitigations identified in the Environmental Document (if applicable).

1.3.1.8 Surface and Ground Water

The Contractor shall establish methods of protecting surface and ground water during construction activities.

1.3.1.9 Work Area Plan

The Contractor shall include a work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. The plan shall include measures for marking the limits of use areas. The proposed work areas shall not exceed those limitations or boundaries identified in the Environmental Document prepared for this project.

1.3.1.10 Plan of Borrow Area(s)

The Contractor shall include a plan of borrow area(s) for the job site. Currently, no borrow pit exists on base for contractor use. Proposals for borrow pit may be submitted to the Base Civil Engineer and Environmental Management Office for consideration.

1.4 SUBCONTRACTORS

Assurance of compliance with this section and all related environmental documents and procedures by subcontractors will be the responsibility of the Contractor.

1.5 PERMITS OBTAINED BY CORPS OF ENGINEERS

The Corps of Engineers will not obtain any permits for this project. See Contract Clause entitled "PERMITS AND RESPONSIBILITIES".

1.6 REGULATORY REQUIREMENTS

The Contractor shall comply with all federal, state and local regulatory and statutory requirements.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 PROTECTION OF ENVIRONMENTAL RESOURCES

The environmental resources within the project boundaries and those

affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. The Contractor shall confine his activities to areas defined by the contract drawings, specifications, and environmental documents. When conflict exists, the Environmental Document shall govern. Environmental protection shall be as stated in the following paragraphs.

3.1.1.1 Protection of Land Resources

Prior to the beginning of any construction, the Contracting Officer will identify all land resources to be preserved within the Contractor's work area (See the Environmental Document for this identification). The Contractor shall not remove, cut, deface, injure or destroy any environmental features including plants, insects, land features of animals outside the boundaries established in the Environmental Document prepared for this project. The Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, top soil, and land forms without special permission from the Contracting Officer. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is permitted, the Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs.

3.1.1.1.1 Work Area Limits

Prior to any construction, the Contractor shall mark the areas where no work is to be performed under this contract. Isolated areas within the general work area which are to be saved and protected shall also be marked or fenced. Monuments and markers shall be protected before construction operations commence and during all construction operations. Where construction operations are to be conducted during darkness, the markers shall be visible during darkness. The Contractor shall convey to his personnel the purpose of marking and/or protection of all necessary objects.

3.1.1.1.2 Protection of Landscape

Trees, shrubs, vines, grasses, land forms and other landscape features to be preserved, indicated and defined on the drawings submitted by the Contractor as a part of the Environmental Protection Plan, shall be clearly identified by marking, fencing, or wrapping with boards, or any other approved techniques.

3.1.1.1.3 Reduction of Exposure of Unprotected Erodible Soils

Earthwork brought to final grade shall be finished as indicated and specified. Side slopes and back slopes shall be protected from wind and water erosion using commonly accepted construction practices as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in instances where the constructed feature obscures borrow areas, quarries and waste material areas, these areas shall not initially be cleared in total. Clearing of such areas shall progress in reasonably sized increments as needed to use the areas developed as approved by the Contracting Officer. Terms and conditions identified in the environmental document to minimize production of airborne particle shall be incorporated into the project.

3.1.1.4 Temporary Protection of Disturbed Areas

Such methods as necessary shall be utilized to effectively prevent erosion, control sedimentation, and entrainment of dust and other particulates in the wind.

3.1.1.5 Location of Contractor Facilities

The Contractor's field offices, staging areas, stockpiles, storage, and temporary buildings shall be planned in areas designated on the contract drawings and approved by the Contracting Officer, and coordinated with the Base Civil Engineer and Environmental Management Office. Temporary movement or relocation of Contractor facilities shall be made only on approval by the Contracting Officer.

3.1.1.6 Borrow Areas on Government Property

Currently, there are no borrow areas located on Edwards Air Force Base. EAFB is receptive to proposals for borrow areas. Proposals must be coordinated with the Base Civil Engineer and the Environmental Management Office in advance of any borrow area usage.

3.1.1.7 Disposal Areas on Government Property

There are no disposal sites located on Edwards Air Force Base. Contractor shall haul material to an off-base approved disposal site.

3.1.1.8 Temporary Excavation and Embankments

Temporary excavation and embankments shall be controlled to protect adjacent areas from disturbance. All temporary excavations shall meet CAL-OSHA requirements

3.1.1.9 Disposal of Solid Wastes

Solid wastes (excluding clearing debris) shall be placed in containers which are emptied on a regular schedule. All handling and disposal shall be conducted to prevent contamination. All disposal of solid wastes shall be at a Contracting Officer approved, off base facility. The contractor shall provide the Contracting Officer with copies of records showing the actual weight of solid waste disposed, as measured at the disposal facility, as well as disposal facility identification.

The Contractor shall be responsible for the preparation of all manifest(s) and or other documentation, for all solid waste. For signature required by law prior to disposal, the Contracting Officers representative (Edward's AFB Environmental Management Office) shall sign the manifests. The contractor shall obtain the services of a licensed and approved transporter of hazardous and or non-hazardous material(s). The contractor shall return copies of the completed manifests to the Environmental Management Office department within 30 days of the date the manifest(s). All costs involved in the preparation of the hazardous or non-hazardous manifest(s) and or other documentation, removal, disposal, recycling and or other costs involved, etc, shall be for the responsibility of the contractor.

3.1.1.10 Disposal of Chemical (Hazardous) Wastes

The off-base disposal of all hazardous materials must be in accordance with all applicable laws, rules and regulations, and the Base Hazardous

Materials and Hazardous Waste Disposal plan.

Paint, Paint products, sealants, solvents, cements, caulking, asphaltic compounds, pesticides, herbicides, and rodenticides, etc., are all considered to be hazardous materials. The containers in which these materials are held, unless the container is thoroughly dried, are also considered to be hazardous waste. All usable or unusable residues shall be retained by the contractor. Thoroughly dried containers that have held hazardous materials shall be prepared for disposal at an off-site location by punching a 1/4 inch (.6 cm) hole in the container 2 inches (5 cm) up from the bottom.

Chemical wastes (including pesticides) shall be stored in appropriate containers, in compliance with all applicable laws, rules and regulations. The waste shall be removed from the work area, to a Contracting Officer's approved, off base, location and disposed of in accordance with Federal, State, and local regulations. No waste shall remain on Edwards AFB for longer than 75 days. Contractor shall maintain appropriate records and manifests of disposed quantities and locations in the event of a federal, state or local inspection of records. The contractor shall be responsible for the preparation of all manifest(s) and or other documentation. The contractor shall obtain the services of a licensed and approved transporter of hazardous and or non-hazardous material(s). The contractor shall arrange with the transporter(s) for all manifest(s) and or other documentation, to be returned to Edwards' Environmental Management Office within 30 days of the date the manifest(s). All costs involved in the preparation of the hazardous or non-hazardous manifest(s) and or other documentation, removal, disposal, recycling of wastes and or other costs involved, etc, shall be the responsibility of the Contractor.

3.1.1.11 Hazardous Materials

The contractor shall submit Material Safety Data Sheets (MSDS) on all hazardous materials (As defined by federal, state and local regulations) before such materials are brought on base. The contractor shall maintain a Hazards Communication program until the project is completed. All project personnel shall be informed of the program, and the location of the program materials.

3.1.1.12 Contractor Equipment

The parking and servicing of contractor equipment and vehicle is of concern to Base Environmental Management. Both mobile (trucks, bulldozers, and etc.) and immobile (generators, welding machines, compressors) equipment is covered by this section. The hazards of concern included those associated with the leaking or spilling of fuels, oils, greases, cleaning agents, and etc. The contractor shall implement the following mitigations:

Impervious membranes be used to cover the ground surface where mobile and immobile equipment would be parked and/or serviced.

That all leaks be repaired immediately, or equipment be replaced as necessary, and that the equipment be kept in good repair.

All used oils, filters, etc., be removed from the site on a daily basis, and all leaks and spill be cleaned up immediately. Contractor is responsible for complying with all applicable laws regulating release to the environment of any chemicals.

All fuels, oils, lubricants and etc. stored on site be stored, dispensed used and disposed of in accordance with all applicable state, federal, and local laws, rules and regulations.

It is suggested that the contractor provide an equipment servicing truck, or a contracting-officer approved subcontractor of refueling, oiling, lubricating and etc. This would eliminate the need to store fuels, oils and lubricants on base, and the associated environmental liability.

General Electrical Note. All new electrical equipment, of all types, purchased for Edward Air Force Base projects contain no detectable PCBs.

3.1.2 Pollution Prevention

Contractor shall adhere to Federal, State, Local and base policies with regards to pollution prevention. The use of Class I ozone depleting substances (ODC s) during the performance of this work, or when used in equipment is discouraged. Any usage of a Class I ODC must be coordinated with the Contracting Officer, the Base Environmental Management Office and the Hazardous Materials Pharmacy before work is started. Contractor shall minimize the usage of hazardous materials and subsequent generation of hazardous wastes whenever possible. Contractor shall maintain an inventory of hazardous materials brought on base, and shall provide a copy of this inventory to the Contracting Officer. Contractor shall employ source reduction techniques whenever possible to minimize wastes. Contractor shall maximize the usage of materials containing recycled contents in accordance with affirmative procurement policies. Contractor is encouraged to use recycling whenever possible. Contractor is encouraged to demonstrate conservation of energy and natural resources.

Should "PCB" ballast(s) be encountered on this project, and, in order to protect Edward's AFB, known as the generator, from liability, now or in the future the contractor shall a.) Recycle PCB contaminated ballast(s), should they be encountered on this project, b.) Not dispose of any part of the ballast(s) containing "PCBs" in any Local, State or Federal approved landfill.

There are currently no known facilities authorized to accept "PCB" contaminated ballast's for "Recycling" within the State of California. All ballast's capacitors and other "PCB" contaminated material shall be disassembled at a State or Federally approved facility and shall be incinerated at a State or Federally approved facility. Incineration of all "PCB" contaminated material shall be in accordance with State and or Federal environmental requirements, 99.9999% destruction, and shall be so noted, on the manifest or other documentation that is returned to the Edward's Air Force Base AFFTC/EM department. Notation of the recycling of all other parts of the non-contaminated remaining metal portions of the ballast(s) recycled in a State or Federal environmentally approved facility, and, the manner of the recycling shall be noted on the manifest or other documentation that is returned to Edward's AFB AFFTC/EM department. Should non-contaminated ballast(s) be encountered on this project, the contractor shall recycle the ballast(s) in accordance with all Local, State, Federal and Air Force approved methods in an approved facility and in accordance with all approved environmental regulations.

Should fluorescent tubes, and or HID lamps be encountered on this project, it is recommended, that the contractor not dispose of fluorescent tubes and or hid lamps, that have been identified as containing Mercury, in any Local, State or Federal landfill. Recycling of fluorescent tube, and hid

lamps, that have been identified as containing mercury, in order to reclaim the Mercury, Glass and other Metal Parts, shall be accomplished, by a State or Federal approved recycler, in accordance with State and or Federal environmentally approved methods. There are State and or Federal approved facilities for the recycling of fluorescent tubes and hid lamps containing Mercury located in the State of California. Notification of the State or Federal approved recycler shall be noted on the manifest, or other documentation, which is to be returned to Edward's AFB AFFTC/EM department.

3.2 POLLUTION PREVENTION

3.2.1 Ozone Depleting Compounds

The Contractor shall adhere to Federal, State, Local, and Base policies with regards to pollution prevention. The use of Class I Ozone Depleting Compounds (ODC's) during the performance of this work, or when used in equipment is discouraged, must be coordinated with the Contracting Officer's Representative, the Base Environmental Management Office and the Hazardous Materials Pharmacy, and be approved prior to use.

The Contractor shall minimize the use of hazardous materials and the subsequent generation of hazardous wastes whenever possible. The Contractor shall maintain an inventory of hazardous materials brought on Base and shall provide a copy of this inventory to the Contracting Officer's Representative.

The Contractor shall employ source reduction techniques whenever possible to minimize wastes. The Contractor shall maximize the use of materials containing recycled contents in accordance with affirmative procurement policies. The Contractor is encouraged to demonstrate conservation of energy and natural resources and use recycling whenever possible.

3.2.2 PCB, PCB Articles, PCB Contaminated Items

Should "PCB" ballasts or other PCB contaminated wastes be encountered on this project, the Contractor shall provide the following:

1. Disposal of PCBs and PCB contaminated wastes shall be by incineration in an EPA approved facility. For carcasses and similar components, the term incineration as used here means the complete destruction of PCBs with recycling of reusable metals.
2. Submit a Certificate of Destruction to the Government not more than 90 calendar days from the date the waste is received at the Approved Disposal Facility. The Certificate of Destruction shall include:
 - a. Name, Address, EPA Identification number of disposal facility.
 - b. Waste identification, including manifest number for shipment.
 - c. A statement certifying the fact of incomplete destruction of the identified PCB waste, including the date(s) of destruction, and identifying the process used.

Should non-contaminated ballasts be encountered on this project, the Contractor shall recycle the ballast(s) in accordance with Federal, State, Local and Air Force approved methods in a licensed facility in accordance with current environmental regulations.

Should fluorescent tubes, and/or HID lamps be encountered on this project, it is recommended that the Contractor not dispose of fluorescent tubes and or HID lamps that have been identified as containing Mercury, in any Federal, State, or Local landfill. Recycling of fluorescent tubes and HID lamps that have been identified as containing Mercury, in order to reclaim the mercury, glass and metal parts, shall be accomplished at a State or Federally approved facility. There are approved facilities for the recycling of fluorescent tubes and HID lamps containing Mercury located in the State of California. The name, address and identification number of State or Federally approved facility shall be noted on the manifest, certificate of destruction, or other documentation, which shall be returned to Edward's AFB AFFTC/EM department.

3.3 HISTORICAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES

3.3.1 Cultural Resources in or Near the Work Area

There may be cultural resources in or near the work area. All work of a ground disturbing nature will be confined to those areas designated for the project. Environmental documentation shall be carefully reviewed for any special directions or restrictions related to cultural resource protection, and all mitigations identified in the environmental document shall be incorporated into the project.

3.3.2 Know Cultural Resources within or Adjacent to Work Area

Known cultural resources within or adjacent to the contractor's work area will be so designated by the Contracting Officer. Precautions shall be taken by the contractor to avoid and preserve all such resources as they existed at the time they were pointed out to the contractor. The contractor shall depict the location of these resources of the contract drawings and shall assume responsibility for their protection during the contract. Cultural resource location information is protected and shall be disseminated only on a need-to-know basis.

3.3.3 Collection of Artifacts and Trespass

All contract personal shall be instructed not to collect any artifact or specimen or trespass into areas designated as cultural resources.

3.3.4 Discovered Artifacts

If during construction items of an apparent archaeological or historic interest (i.e. arrowheads, old bottles, etc.) are discovered, they shall be left undisturbed and the contractor shall report the find immediately to the Contracting Officer. The Contracting Officer shall then immediately notify the Base Historic Preservation Officer of the find so that the find may be evaluated.

3.4 PROTECTION OF FISH AND WILDLIFE RESOURCES

The Contractor shall keep construction activities under surveillance, management and control to minimize interference with, disturbance to and damage of fish and wildlife. Species that require specific attention along with measures for their protection shall be listed by the Contractor prior to beginning of construction operations.

3.4.1 Wildlife Encounters During Construction

It is not anticipated that there will be an abundance of wildlife encounters at the project site. However, should the Contractor discover animals, bats or nesting birds living within the construction boundaries, operation shall be suspended at the site of discovery and continued in other areas. The Contractor shall notify the Contracting Officer immediately of the finding. Included with the notification shall be a brief statement to the Contracting Officer of the location and the findings. How to identify sensitive animals that may be discovered will be provided at the Preconstruction Conference.

3.4.2 Desert Tortoise

Contractors shall follow all terms and conditions Identified in the "Biological Opinion for Routine Operations and Facility Construction within the Cantonment Areas of Main and South Base, Edwards AFB, CA (1-6-91-F-28)", dated 4 Dec 91, or the applicable biological opinion for this project. The applicable biological opinion will be included in the environmental document.

The Contractor shall follow all terms and mitigations identified in the Biological Opinion that is applicable to this project. Contractor employees shall not touch, harm, harass, or kill desert tortoises. The Contracting Officer shall be notified immediately of all desert tortoise sightings. Should construction activities threaten the survival of any desert tortoises, those activities will immediately cease.

3.4.3 Environmental Awareness

Environmental Awareness. The Contractor shall implement an employee s environmental awareness program which will be provided to construction and operation employees with information to encourage awareness and preservation of the desert ecosystem and the resources found in the Western Mojave Desert. This information shall be distributed to and discussed with all employees during employee orientation sessions. This information shall also be provided to all visitors and subcontractors that will be on-site. The Contractor shall have all persons participating in the environmental awareness program sign a statement declaring that the individual understands and will adhere to the guidelines set forth in the program material.

3.4.4 Trash and Litter Control

Trash and Litter Control. The Contractor shall develop a strict trash and litter control program. A litter control program shall consist of supplying an adequate number of covered trash and litter receptacles in all appropriate locations. All containers shall be raven-proof, and all aspects of the litter control program will discourage the scavenging of litter by ravens, in addition to providing receptacles for trash generated on-site.

3.5 NOISE CONTROL

Contractor shall follow all terms and conditions regarding noise control identified in the Environmental Document. All operations shall be conducted to minimize impacts to residents, workers and wildlife in the area. All noise-generating devices shall be equipped with silencers and mufflers, and any other devices required to minimize noise and dust.

3.6 PROTECTION OF AIR RESOURCES

The Contractor shall keep construction activities under surveillance, management and control to minimize air emissions and protect air resources.

All activities, equipment, processes, and work managed or performed by the Contractor in accomplishing the specified construction shall be in strict accordance with California Air Resources Board (CARB) criteria, and all Federal laws and regulation governing Air Quality issues including emissions, permitting and performance laws and standards, In Addition, all applicable Air Pollution Control District Rules and Regulations shall be adhered to. All requirements of the mentioned rules and regulations as well as the Special management techniques as set out below shall be implemented to control air pollution by the construction activities which are included in the contract.

3.6.1 Particulate Matter

Dust particles, aerosols, and gaseous by-products from all construction activities, processing and preparation of materials, such as from asphaltic batch plants, shall be controlled at all times, including weekends, holidays and hours when work is not in progress. The Contractor shall maintain all excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and all other work areas within or outside the project boundaries free from particulates which would cause the air pollution standards mentioned in the paragraph "PROTECTION OF AIR RESOURCES" to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type (Contractor must submit and the Contracting Officer approves the Material Safety Data Sheets), light bituminous treatment, baghouse, scrubbers, electrostatic precipitators or other methods will be used as required to control particulates in the work area. Sprinkling, to be efficient, must be repeated at such intervals as to keep the disturbed area damp at all times. The Contractor must have sufficient competent equipment and personnel available to accomplish this task. Particulate control shall be performed as the work proceeds and whenever a particulate nuisance or hazard occurs or is potential to occur.

3.6.2 Other Criteria Pollutants

Hydrocarbons, Carbon Monoxide, Nitrogen Oxides, Sulfur Oxides, lead, and others. All identified Emissions generated from equipment of [processes shall be controlled [per applicable federal, state, and local rules and regulations. All permitted devices shall be operated per the identified limitations. Best Available Control Technology (BACT) and/or Reasonably Available Control Technology (RACT) shall be employed as required.

3.6.3 Hazardous Air Pollutants

All Federal and State regulated hazardous air pollutants shall be controlled and monitored as required by applicable laws and regulations. All permitted devices and processes shall be operated per the identified limitations.

3.6.4 Odors

Odors shall be controlled at all times for all construction activities, processing and preparation of materials.

3.6.5 Monitoring Air Quality

Monitoring of air quality shall be the responsibility of the Contractor. All air areas affected by the construction activities shall be monitored by the Contractor.

3.6.6 Internal Combustion Engines

Kern County APCD Rule 202 requires a permit on all internal combustion engines over 50BHP not connected to a transmission. No permit is needed if the equipment shall be removed from EAFB in 45 days or less. These engines include, but are not limited to: Generators, compressors, and welding machines. If the equipment shall remain on-base for longer than 45 days, a permit from the APCD will be required. The permit shall remain on base as long as the equipment remains, and the contractor shall produce the permit when requested to do so. For further information, contact AFFTC/EM at 805/277-1401.

3.7 PROTECTION OF JOSHUA TREES

3.7.1 Joshua Trees Within Project Site

Due to the limited vegetation in the area, removal or relocation of plants shall be minimized. The Contractor shall obtain approval from the Contracting Officer before removing or relocating any plants within the construction boundaries. Joshua Trees shall be protected to the extent possible and coordination made with the Contracting Officer before moving or relocating this species. Procedures for relocating those within the project site are described as follows:

3.7.1.1 Joshua Trees

Only trees under five (5) feet tall shall be moved using hand tools. Mark North side of the tree and plant in same orientation. Using shovel, dig down to get main root mass (generally within two (2) feet of surface). Try to get tap root and a fibrous water storage structure that it leads to. Take some of the top soil to put in new hole. Roots should be dusted with sulfur to prevent rot. A small amount of manure can be mixed in soil when replanting. Soil should be tamped down and a small berm placed around plant 5-foot diameter. Water with several gallons. Stake in two (2) directions to prevent wind from knocking it down. If not transplanted right away, "heel in" plant (lay then on their side and cover roots with soil). Larger Joshua Trees (5-20 feet tall) shall not be moved but be detoured around by the utilities. If plants need relocation areas, they can be used in landscaping around the base.

3.8 COMPLIANCE LOG

The Contractor shall establish and maintain quality control for environmental protection operations to assure compliance with contract requirements and maintain records of his quality control for all construction operations, including, but not limited to the following items.

The Contractor shall record on daily reports any problems in complying with laws, regulations and ordinances and corrective action taken. Three copies of these records and tests, as well as the records of corrective action taken, shall be furnished to the Government at the end of the project as directed by the Contracting Officer.

3.8.1 Laws, Regulations, and Ordinances

The Contractor must comply with all Federal, State, and local laws, regulations and ordinances concerning pollution control. This includes submitting a Hazardous Materials and Hazardous Waste Management Plan for Edwards Air Force Base.

3.8.2 Protection of Land Resources

The Contractor shall prevent landscape defacement and provide post-construction clean-up.

3.8.3 Protection of Water Resources

The Contractor shall prevent the contamination of lakes, ditches, or other bodies of water with harmful chemicals; the Contractor shall dispose of waste materials to an approved off-base disposal site; and the Contractor shall provide erosion control.

3.8.4 Pollution Control Facilities

The Contractor shall provide for the maintenance of pollution control facilities, and conduct a training course on the maintenance of pollution control facilities.

3.9 INSPECTION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with the Contractor's Environmental Protection Plan.

The Contractor shall, after receipt of such notice, inform the Contracting Officer of proposed corrective action and take such action as may be approved. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions will be granted or costs or damages allowed to the Contractor for any such suspension.

3.10 POST CONSTRUCTION CLEANUP

The Contractor shall clean up all area(s) used for construction.

3.11 RESTORATION OF LANDSCAPE DAMAGE

The Contractor shall restore all landscape features damaged or destroyed during construction operations to original conditions, including removal of all debris, trash, and rubbish. Revegetate disturbed desert areas. Such restoration shall be in accordance with the plans submitted for approval to the Contracting Officer, and shall include an AFFTC/EM approved revegetation plan. Contractor is encouraged to minimize the amount of desert disturbed that shall require restoration.

3.12 MAINTENANCE OF POLLUTION FACILITIES

The Contractor shall maintain all constructed facilities and temporary pollution control devices for the duration of the contract or for that length of time construction activities create the particular pollutant.

3.13 TRAINING OF CONTRACTOR PERSONNEL IN POLLUTION CONTROL

The Contractor shall train his personnel in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities (vegetative covers and instruments required for monitoring purposes) to insure adequate and continuous environmental pollution control.

-- End of Section --